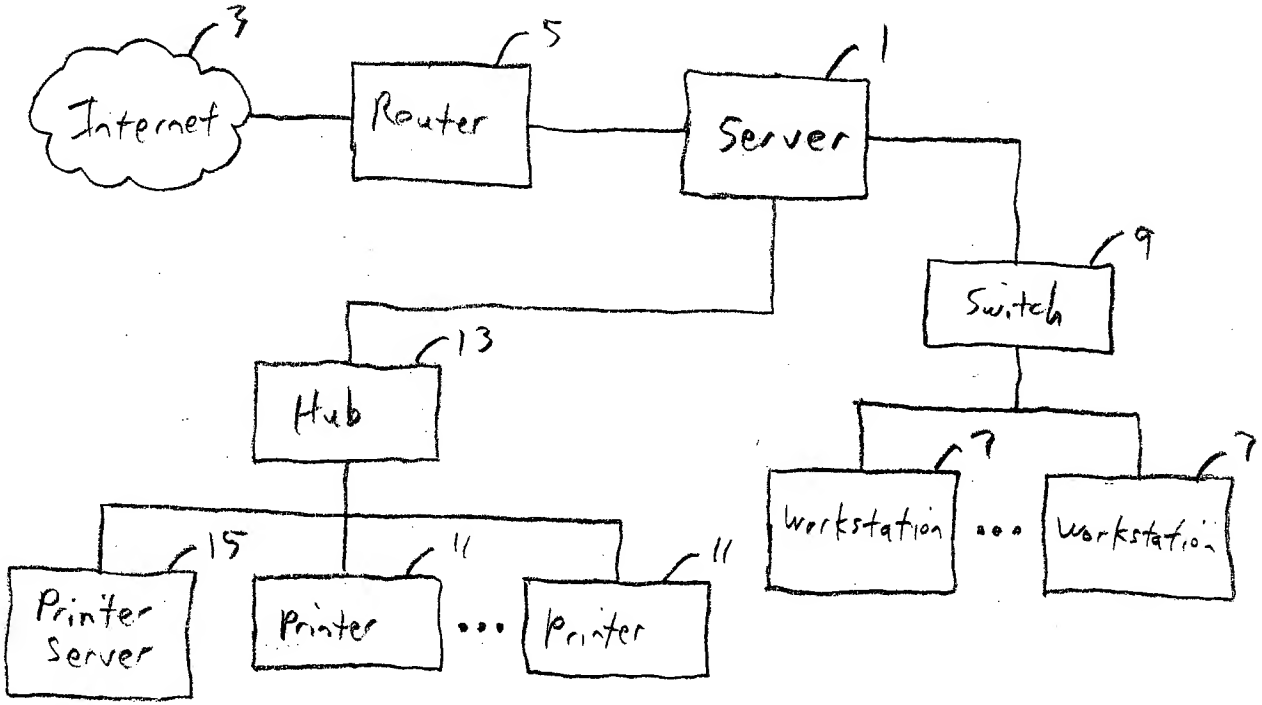
3
Internet
5
Router
1
Server
9
Switch
13
Hub
7
Workstation
...
Workstation
15
Printer Server
11
Printer
...
11
Printer

FIG. 1

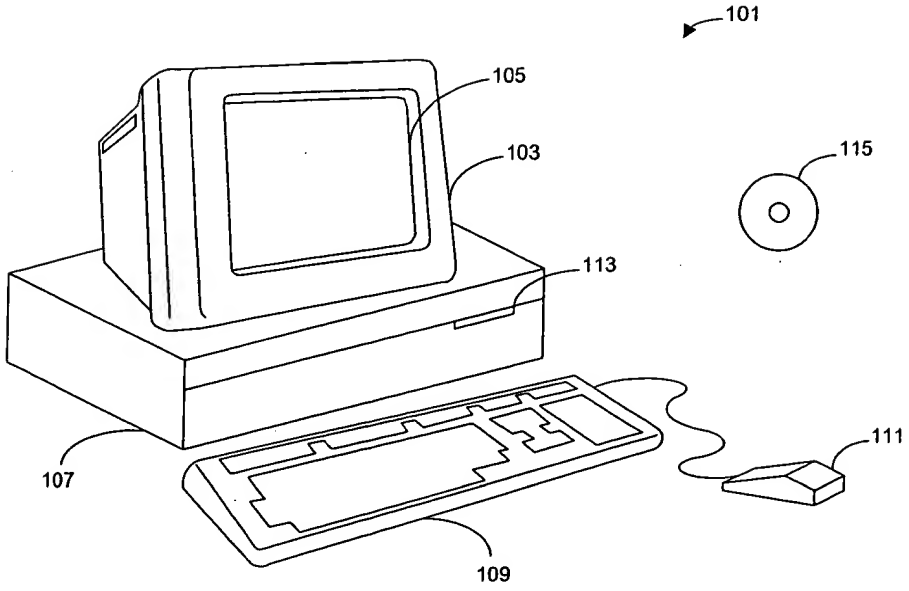
101
105
103
115
113
107
111
109

FIG. 2

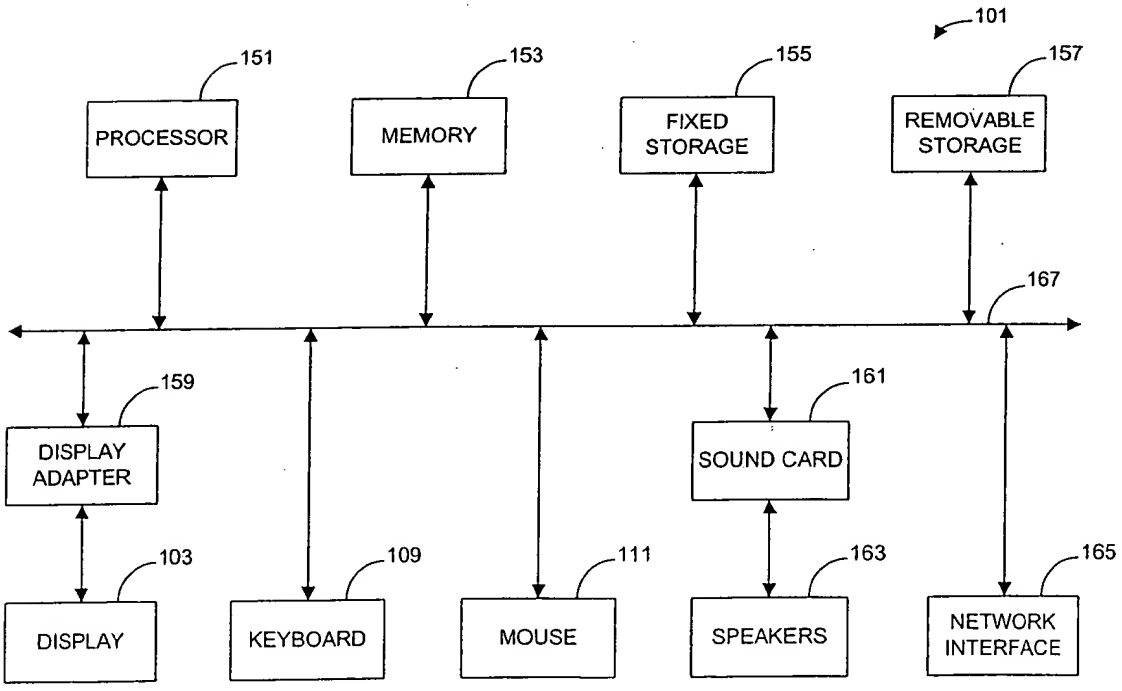
101
151
PROCESSOR
153
MEMORY
155
FIXED STORAGE
157
REMOVABLE STORAGE
167
159
DISPLAY ADAPTER
161
SOUND CARD
103
DISPLAY
109
KEYBOARD
111
MOUSE
163
SPEAKERS
165
NETWORK INTERFACE

FIG. 3

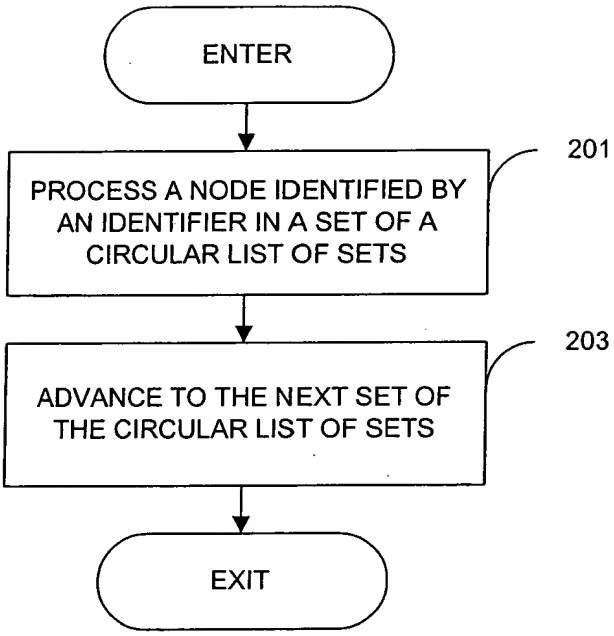
ENTER
PROCESS A NODE IDENTIFIED BY AN IDENTIFIER IN A SET OF A CIRCULAR LIST OF SETS
201
ADVANCE TO THE NEXT SET OF THE CIRCULAR LIST OF SETS
203
EXIT

FIG. 4

251

| IP address | SNMP OID | Expected Response Time ($T_{ERT}$) | Poll Interval ($T_P$) | Transmission Count | Maximum Transmission Count permitted | Time Stamp from Latest Response | Operational Status |
|---|---|---|---|---|---|---|---|
| $IP_A$ | $OID_{A1}$ | $E_{A1}$ | $P_{A1}$ | $C_{A1}$ | $M_{A1}$ | $T_y$ | SA |
| $IP_A$ | $OID_{A2}$ | $E_{A2}$ | $P_{A2}$ | $C_{A2}$ | $M_{A2}$ | $T_f$ | SF |
| • • • | | | | | | | |
| $IP_B$ | $OID_{B1}$ | $E_{B1}$ | $P_{B1}$ | $C_{B1}$ | $M_{B1}$ | $T_u$ | Su |
| • • • | | | | | | | |
| $IP_Z$ | $OID_{Zm}$ | $E_{Zm}$ | $P_{Zm}$ | $C_{Zm}$ | $M_{Zm}$ | $T_d$ | SA |

FIG. 5

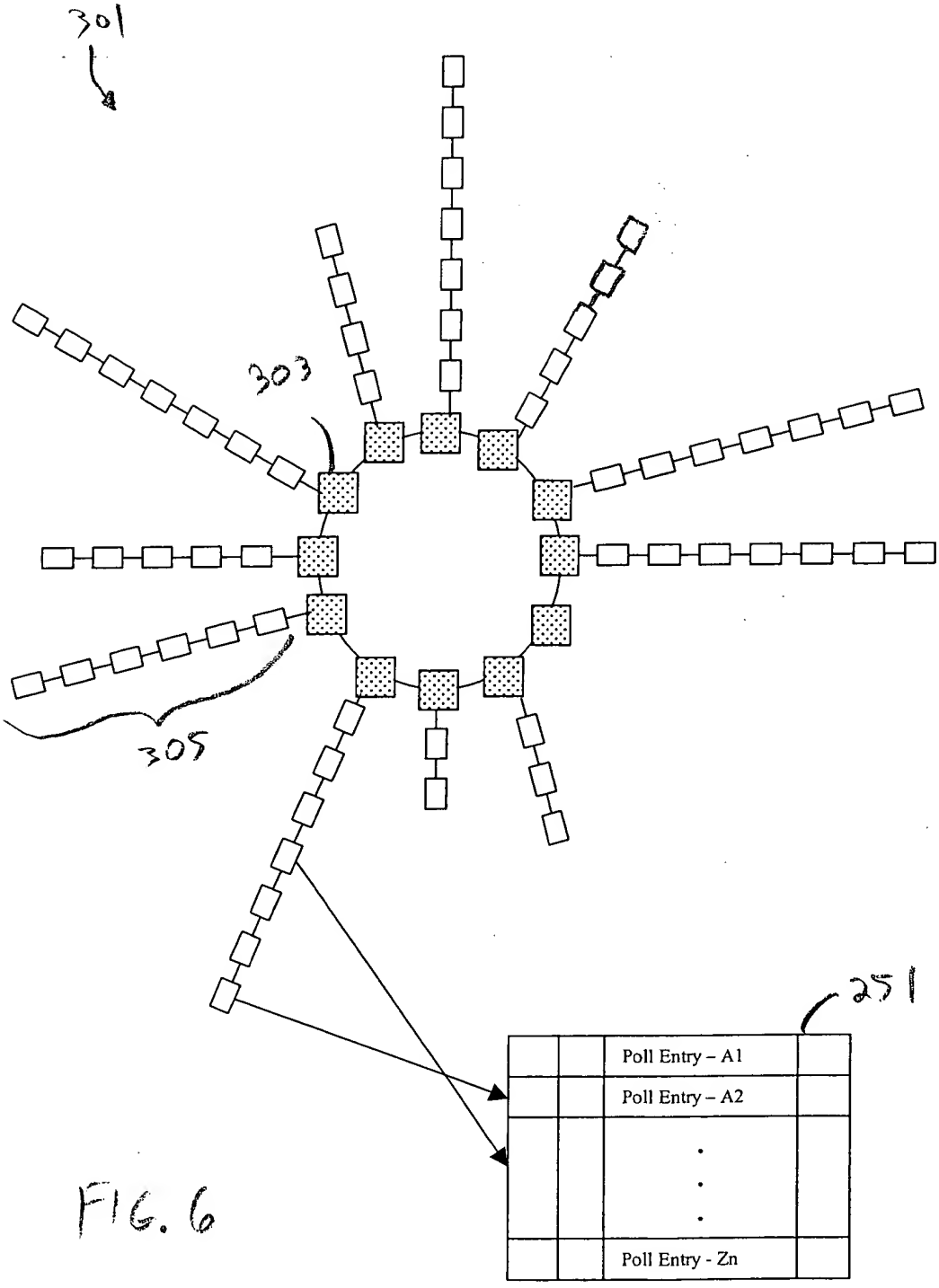


FIG. 6

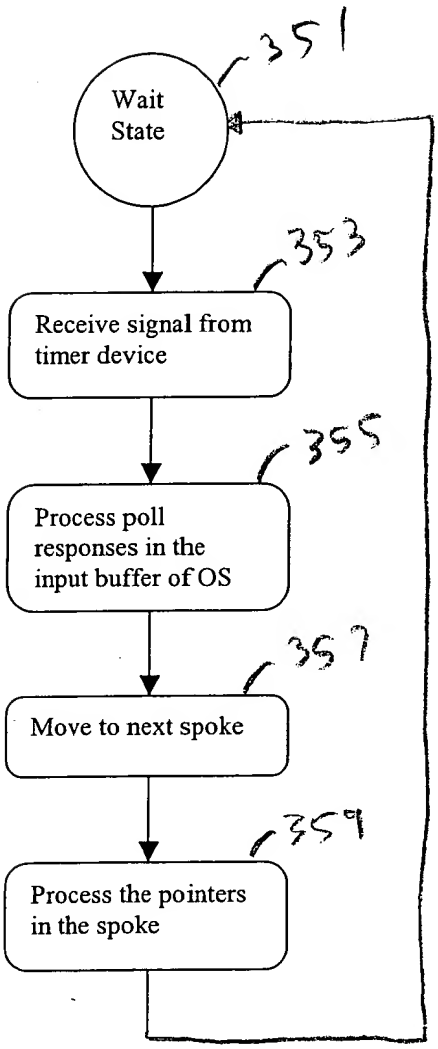
351
Wait State
353
Receive signal from timer device
355
Process poll responses in the input buffer of OS
357
Move to next spoke
359
Process the pointers in the spoke

FIG. 7

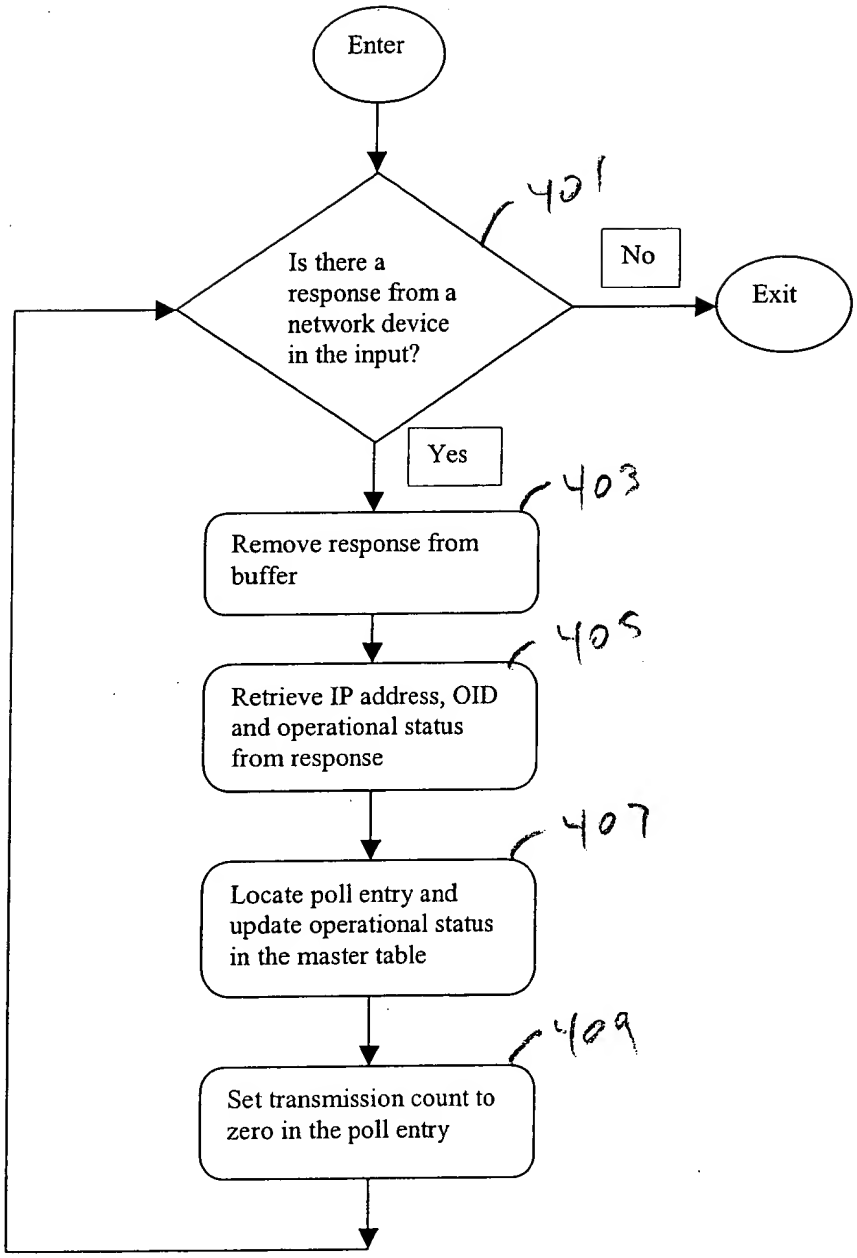
Enter
401
Is there a response from a network device in the input?
No
Exit
Yes
403
Remove response from buffer
405
Retrieve IP address, OID and operational status from response
407
Locate poll entry and update operational status in the master table
409
Set transmission count to zero in the poll entry

FIG. 8

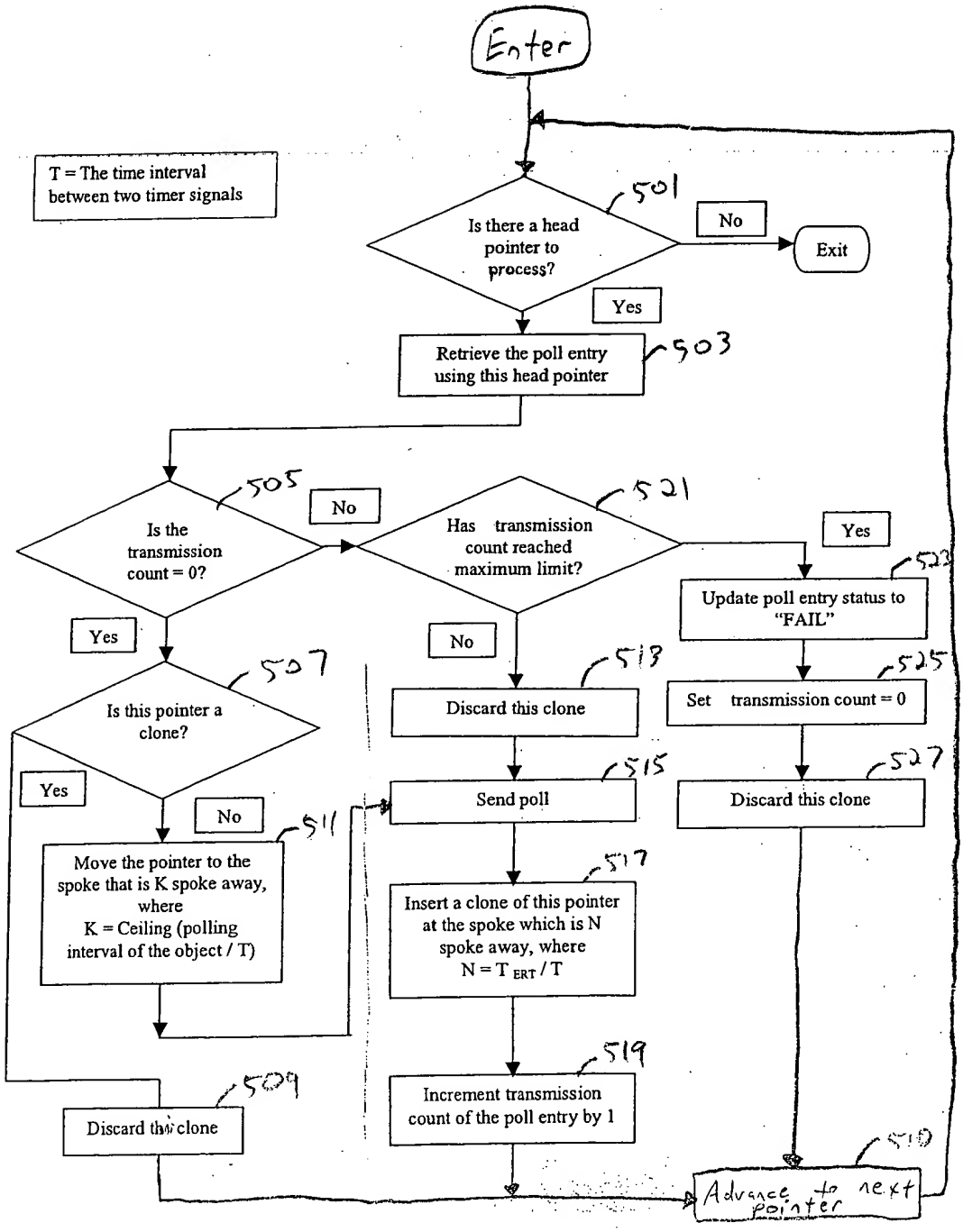
Enter
T = The time interval between two timer signals
501
Is there a head pointer to process?
No
Exit
Yes
503
Retrieve the poll entry using this head pointer
505
Is the transmission count = 0?
No
521
Has transmission count reached maximum limit?
Yes
523
Update poll entry status to "FAIL"
Yes
507
Is this pointer a clone?
No
513
Discard this clone
525
Set transmission count = 0
Yes
No
515
Send poll
527
Discard this clone
511
Move the pointer to the spoke that is K spoke away, where K = Ceiling (polling interval of the object / T)
517
Insert a clone of this pointer at the spoke which is N spoke away, where N = T ERT / T
509
Discard this clone
519
Increment transmission count of the poll entry by 1
521
Advance pointer to next

FIG. 9

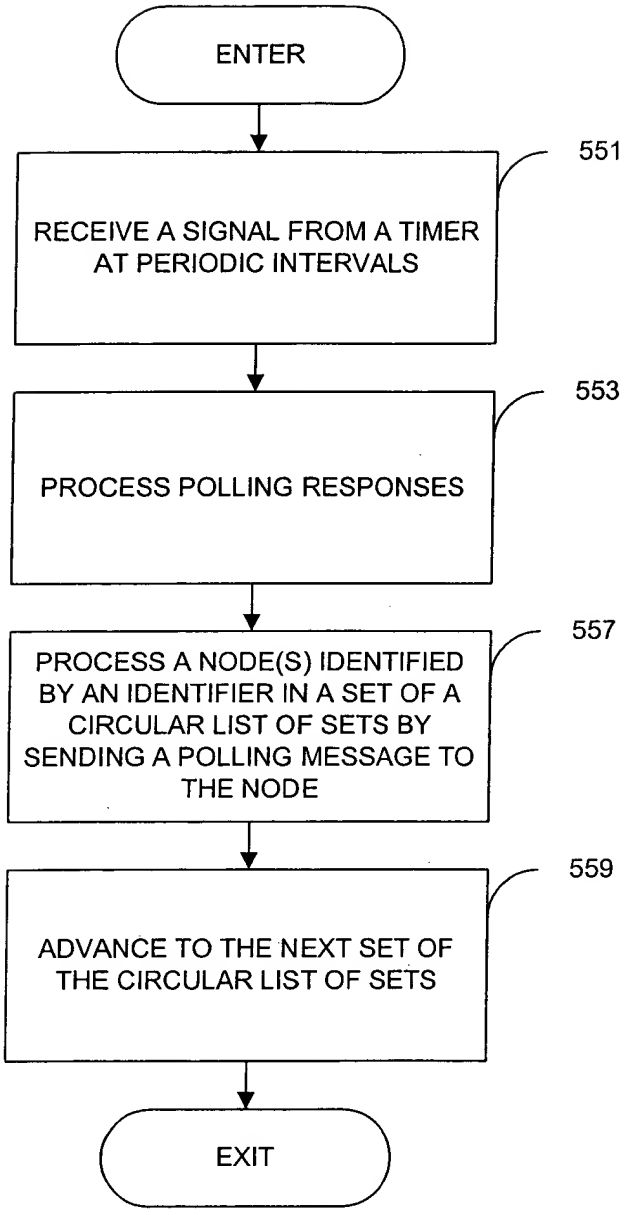
ENTER
551
RECEIVE A SIGNAL FROM A TIMER AT PERIODIC INTERVALS
553
PROCESS POLLING RESPONSES
557
PROCESS A NODE(S) IDENTIFIED BY AN IDENTIFIER IN A SET OF A CIRCULAR LIST OF SETS BY SENDING A POLLING MESSAGE TO THE NODE
559
ADVANCE TO THE NEXT SET OF THE CIRCULAR LIST OF SETS
EXIT

FIG. 10